

REMARKS

In response to the Office Actions mailed August 28, 2002 (paper number 6) and the personal interview conducted between the Examiner and the Applicant's representatives, James W. Ausley and Michael H. Trenholm on December 16, 2002, the Applicant respectfully submits this formal response and respectfully requests reconsideration of the above referenced application in light of the Amendments and remarks herein. The Applicant would first like to thank the Examiner for the courtesy of the personal interview extended on December 16, 2002. In the interview, proposed claim amendments were discussed in light of the Gillick et al. (U.S. Patents 3,237,545 and 3,343,473) and Stanton et al. (U.S. Patent 6,416,116) references.

In response to the Office Action mailed October 28, 2002 (Paper No. 6) the Applicant respectfully submits the attached proposed drawing changes for the Examiners consideration. In the Office Action, the Examiner objected to the drawings for failing to comply with 37 C.F.R. 1.84(p)(5) because they do not include the following reference signs mentioned in the description "102, 112, 114, 140, 128". The Applicant thanks the Examiner for noting this lack. Attached hereto are proposed drawing changes for the Examiner's consideration which include appropriate call-outs for these reference signs. The Examiner also objected to the drawings because reference number 10 of figure 1 is shown but no reference number 10 is indicated in the specification. The Applicant thanks the Examiner for the indication that the correct reference designation should be 102 and confirms that this is the case. Appropriate proposed corrections are submitted in the attached proposed drawing changes. The Examiner also noted that the lead line for reference number 171 is faded and the Applicant attaches hereto proposed drawing changes marked clearly indicating the terminus of the lead line. The Examiner also notes that in Figure 1, a lead line is present above the lead line for reference designator 126 which does not have a corresponding reference designator. The Applicant thanks the Examiner for noting this discrepancy and a proposed drawing change with the intended reference designator "172" is submitted for the Examiners consideration. The Examiner also notes that in Figures 2 and 3 the indication of "(TYP)" is shown which is unclear. The Applicant intended this notation to indicate that the reference designator indicates a typical one of a plurality of elements of the invention however will eliminate the notation for clarity.

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The Examiner also objected to the drawings as failing to comply with 37 C.F.R. 1.84(p)(5) because they include reference signs not mentioned in the description, in particular 1, 101, 120. The Applicant thanks the Examiner for noting this discrepancy and notes that in the attached proposed drawing changes these reference designators are deleted.

The Examiner also objected to the drawings as under 37 C.F.R. 1.83(a) in that the drawings must show every feature of the inventions as recited in the claims, in particular “the interconnected coach panels”, “interior trim panels”, “structural panels”, “vertical walls” and “roof”.

The Applicant respectfully directs the Examiner’s attention to Figure 1, wherein the common intake comprising, in this view, interior trim panels are shown and Figure 3, where interconnected coach panels, structural panels, vertical walls and the roof are indicated. The Applicant notes that the elements are not all provided with a reference designator in the drawings, however, believe they are illustrated and supporting description is provided in the specification in Paragraph 30. The Applicant also directs the Examiner’s attention to the fact that the subject application is a continuation-in-part application of U.S. Application No. 09/728,946 where additional construction details may be referenced. The referenced application is to issue as a U.S. patent.

The Examiner also rejected claims 6 through 16 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim subject matter which the Applicant regards to in the invention. In particular, in claim 6 the Examiner indicated that the limitation “coach panels” in line 2 lacks sufficient antecedent basis, and in claim 7 the limitations “adjoining inner surfaces”, “coach panels”, “inner surfaces”, and “interior trim panels” lack antecedent basis. With respect to the use of the limitation “coach panels” in claim 6, the Applicant respectfully directs the Examiner’s attention to the introduction of the limitation of “coach panels” at lines 2 and 3 of claim 1 as well as the intervening dependent Claims 4 and 5 at lines 1 and 2 respectively. With respect to the limitations of “the adjoining inner surfaces”, “inner surfaces”, and “interior trim panels”, the Applicant respectfully directs the Examiner’s attention to the introduction of these limitations at lines 2 of the intervening dependent Claims 5 and 6 as amended.

The Examiner also noted that insufficient antecedent basis exists for the claim limitations of "the common air intake", "inner surfaces", "coach panels", "adjoining surfaces", "interior trim panels", "adjoining coach panel", and "the adjoining interior trim panels" are provided in Claim 8. The Applicant respectfully directs the Examiner's attention to the introduction of the limitation "common air intake" and the "coach panels" in claim 1 as amended. The Applicant further directs the Examiners attention to the introduction of the limitations "inner surfaces", "adjoining surfaces" "adjoining coach panel", "the adjoining interior trim" and "interior trim panels" in the intervening dependent claims 5, 6 and 7. The Applicant notes that Claim 1 introduces the limitation of "inter-connected coach panels" and that the coach panels being inter-connected inherently introduces the claim element that at least some of the coach panels are adjoining.

The Examiner also indicated that the limitation of "a box structure" is unclear as to which features of the invention the Applicant intends to define. The Applicant notes that the combination of "at least two adjoining inter-surfaces of coach panels and at least two adjoining surfaces of interior trim panels wherein each adjoining coach panel adjoins one of the adjoining interior trim panels" defines a structure where each inner surface of a coach panel adjoins another inner-surface of a coach panel and an interior trim panel and similarly each interior trim panel adjoins another interior trim panel and an inner surface of a coach panel so as to collectively define a closed rectangular prism structure which the Applicant denotes with a more commonly understood term of "box".

In Claim 9 the Examiner indicates that the limitations "the weight" at line 5 and "the interior" at line 6 lacks sufficient antecedent basis in the claim. The Applicant respectfully directs the Examiner's attention to the introduction of the limitation "an interior" at line 2 of the claim as amended. With respect to the limitation "the weight" at line 5, the Applicant believes that weight is an inherent property of matter and that introduction of the limitation as "a weight" would render the claim indefinite as implying that a single physical entity such as a motorhome can have a plurality of weights.

The Examiner also indicates that in claim 10 the limitation "the interior" at line 2 lacks sufficient antecedent basis and the Applicant respectfully directs the Examiner's attention to the

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introduction of the limitation of "an interior" at the independent claim 9 from which claim 10 depends.

The Examiner also noted the claims 14 and 15 site the limitations of "structural panels" and "interior trim panel(s)" respectively at line 2 and the Applicant respectfully directs the Examiners attention to the introduction of these claim elements at lines 1 and 2 of the independent claim 9 from which claims 14 and 15 depend.

The Examiner also noted a lack of sufficient antecedent support in Claim 16 for the limitations of "adjoining structural panels", "adjoining interior trim panels", "adjoining structural panels", and "adjoining interior trim panels". The Applicant respectfully notes that the phrasing of the claim "wherein the common air intake comprises of at least two adjoining structural panels and at least two adjoining interior trim panels" properly introduces these claim limitations into the claim and that the limitations are not phrased so as to require an interceding introduction in previous claims. With respect to the limitation of "a box structure" the Applicant respectfully directs the Examiners attention to the previous discussion with respect to the use of the limitation in claim 8.

The Examiner also rejected claims 1, 3 through 4, 9 through 10, and 12 and 13 under 35 U.S.C. § 103a as being unpatentable over Gillick et al. '545. As discussed in the interview, the Applicant believes that the features of "a heating, ventilation and air conditioning (HVAC) system for a motor home having an interior living area enclosed by interconnected coach panels, the HVAC system comprising a furnace unit, an air conditioning unit, and a common air intake directing air from the interior living to both the furnace and the air conditioning units wherein the common air intake comprises inner surfaces of a rear coach panel" (claim 1 as amended) to be novel and patentable under the requirements of 35 U.S.C. § 103(a). The Applicant believes that the dual use of the coach panels disposed towards the rear of the motor home for physical structure of the motor home as well as defining an air intake feeding both the furnace and air conditioning unit provides significant weight, cost, and space savings that are not taught by the art of reference.

In particular, the Applicant notes that Gillick et al. '545 teaches a common intake feeding a heating and ventilation system for a vehicle, however, the Gillick et al. '545 reference teaches the intake to consist of a separate dedicated single use duct (cf Element 119 in figure 11) and this

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air intake is disposed towards the side of the vehicle approximately midway along the length of the vehicle. The Gillick et al. '545 reference does not teach the air intake to comprise structural panels of the vehicle, particularly structural panels disposed towards the rear of the vehicle.

The Examiner rejected Claims 5 through 8 and 14 through 16 under 35 U.S.C. 103a as being unpatentable over Gillick et al. '545 and further in view of Stanton et al. '116. As discussed in the interview, the Applicant notes that Stanton '116 teaches a structure for mass transit vehicles wherein the side vehicle structure does include passages for ventilation and air movement (cf Figure 4), however, even the combination of Stanton et al. and the Gillick et al. '545 references fail to teach or suggest the desirability of "a common air intake directing air from the interior living area to both the furnace and the air conditioning units wherein the common air intake comprises inner surfaces of the rear coach panel (claim 1 as amended).

The Examiner also rejected Claims 1, 3 through 4, 9, 10, 12 and 13 under 35 U.S.C. 103a as being unpatentable over Gillick et al. '473. The Applicant notes that Gillick et al. '473 also teaches the structure of an air distribution system in a vehicle where side vehicle panels are formed to facilitate air distribution (cf figure 3, 4 and 6 through 8) however these are again disposed along the sides of the vehicle and the Applicant finds no teaching or suggestion in the Gillick et al. '473 reference to place a common air intake, including inner surfaces of rearwardly disposed coach panels.

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SUMMARY

From the foregoing, the Applicant believes that the application as amended now complies with the requirements of 37 C.F.R. 1.84 and 35 U.S.C. § 112 second paragraph. The Applicant also believes that the invention as now claimed is patentable under the requirements of 35 U.S.C. 103(a) over Gillick et al. '545, Gillick et al. '473 and Stanton et al. '116 taken either individually or in any possible combination. The Applicant thus believes that the application is now in a condition ready for allowance and respectfully requests the prompt allowance of the same. The Applicant believes that this response fully addresses the objections and rejections raised by the Examiner in the Office Action, however should there remain any further impediments to the prompt allowance of this application, the Examiner is respectfully requested to contact the Applicant's undersigned representative at the indicated telephone number.

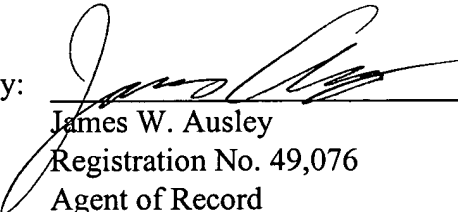
Attached hereto is a marked-up version of the changes made to the application by the current amendment. The attached page is captioned "**Version with Markings to Show Changes Made**"; additions are shown as **bolded** and deletions are shown as a ~~striethrough~~.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Version with Markings to Show Changes Made

IN THE ABSTRACT:

Please amend the abstract of the disclosure as follows:

“A unitized heating, ventilation, and air conditioning (HVAC) system ~~for ventilating and regulating~~ **ventilates and regulates** the air temperature inside a motorhome. Air is drawn from inside the motorhome and is directed to a furnace and an air conditioning unit via a common air return. A filter is positioned within the common return. The HVAC unit is compact and adapted for placement below the living area of motorhome so as to reduce the noise inside the cabin generated by the HVAC system and to reduce the center of ~~mass~~ **gravity** of the motorhome ~~so~~ **equipped**.

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IN THE SPECIFICATION:

Please amend the specification of the subject application as follows:

Page 1, please amend the first paragraph as follows:

Related Applications

This application is a continuation-in-part of U.S. Application No. 09/728946 entitled "Motorhome With Increased Interior Height" filed December 1, 2000 and claims the benefit of U.S. Provisional Application No. ~~(unknown, attorney docket ALFALE 045PR)~~ 60/318,136 filed September 7, 2001 entitled "Motorhome HVAC System".

Page 3, please amend the seventh paragraph as follows:

[0007] The chassis of a motorhome is typically constructed on a steel ladder frame chassis. The chassis is a partially complete vehicle and is generally procured from a manufacturer such as ~~Freightliner~~ **FREIGHTLINER** or ~~Ford Motor Company~~ **FORD MOTOR COMPANY**. The chassis typically consists of two parallel frame rails extending the length of the chassis and interconnected with several perpendicular cross-braces to form a ladder frame. An engine, transmission, and fuel tank(s) are generally placed between the frame rails near one end. Suspension, steering, brake, and road wheel assemblies are attached outboard of the frame rails.

Page 5, please amend the fifteenth paragraph as follows:

[0015] The aforementioned needs are satisfied by the present invention, which in one aspect is a **heating, ventilation, and air-conditioning (HVAC) system for a motorhome having an interior living area enclosed by interconnected coach panels, the HVAC system comprising a furnace unit, an air-conditioning unit wherein the furnace and the air-conditioning units are adapted to be positioned below the interior living area of the motorhome, and a single air intake directing air from the interior living area to the furnace and the air-conditioning units.**

Page 7, please amended the twenty-second paragraph as follows:

[0022] The vehicle frame 100 further facilitates routing of a heating, ventilation, and air conditioning (HVAC) system 110 below the beltline of the frame 100 so as to avoid intrusion of the HVAC system 110 into the interior living space of the motorhome 104 to further enable increased interior ceiling height of the motorhome 104 employing the vehicle frame 100. The HVAC system 110 comprises a furnace 164 and air conditioning unit 162 including evaporator, condenser, and compressor. These relatively heavy portions of the HVAC system 110 are installed below the beltline of the frame 100 thereby maintaining a lower **center of gravity** (c.g.) than other designs.

Page 8, please amend the twenty-eighth paragraph to read as follows:

[0028] The HVAC system 110 in this embodiment comprises the air conditioning unit 162, the furnace 164, a manifold 166, a duct 170, at least one register 172, an intake 171, and a filter 173 as illustrated in Figure 1. The **single (common)** intake 171 (shown in section view in Figures 1 and 3) commonly directs air from the interior of the motorhome 104 to **both** the air conditioning unit 162 and the furnace 164. The filter 173 is positioned within the intake 171 and filters the air entering the HVAC system 110. The air conditioning unit 162 receives air from the interior of the motorhome 104 via the intake and cools this filtered incoming air and directs the cool air into the interior of the motorhome 104 via the manifold 166, duct 170 and register(s) 172. The furnace 164 warms incoming air and directs the warm air into the interior of the motorhome 104 also via the manifold 166, duct 170 and register(s) 172. The air-conditioning unit 162, furnace 164, and filter 173 are commercially available and the selection of an appropriate model of air-conditioning unit 162, furnace 164, and filter 173 is expected to vary depending on the size of and amount of insulation provided for a particular embodiment of motorhome 104.

Page 9, please amend the thirtieth paragraph to read as follows:

[0030] The common intake 171 is advantageously formed on two sides by interior paneling that serves both to direct the air inside the intake 171 and also provide interior trim in the interior of the motorhome 104. The other two sides of the intake 171 are formed by interior surfaces of the coach in a corner of the motorhome 104. Thus, the intake 171 is substantially

defined by body structure of the motorhome 104 that simultaneously serves other structural or aesthetic functions thereby reducing material redundancy and effecting weight and materiel savings for the motorhome 104. In addition, by directing air to both the air-conditioning unit 162 and the furnace 164, the common intake 171 of this embodiment, obviates the need for the separate air intakes for the A/C unit and the furnace of other known designs.

Page 10, please amend the thirty-second paragraph to read as follows:

[0032] The HVAC system 110, of this embodiment, is located within or below the plane of the chassis 102. Positioning the air conditioning unit 162 and the furnace 164, which are both relatively heavy items, within or below the plane of the chassis 102 further lowers the center of ~~mass~~ gravity of the motorhome 104 to thereby improve the road handling of the motorhome 104. The placement of the HVAC system 110 of this embodiment also distances the duct 170 and registers 172 from the coach roof 140. Other known motorhome designs rout HVAC ducting adjacent the roof of the vehicle which exposes the cool air to thermal heating from sunlight incident on the roof of the vehicle. In the motorhome 104 of this embodiment, the duct 170, register 172, and air conditioning unit 162 are shaded from incident sunlight by the motorhome 104. Thus, the HVAC system 110 can more efficiently provide cool air to the interior of the motorhome 104. This improves the occupant's comfort in hot weather and reduces fuel costs for powering the HVAC system 110.

IN THE CLAIMS:

1 (Amended) A heating, ventilation, and air-conditioning (HVAC) system for a motorhome having an interior living area enclosed by interconnected coach panels, the HVAC system comprising:

a furnace unit;

an air-conditioning unit wherein the furnace and the air-conditioning units are ~~adapted to be~~ positioned below the interior living area of the motorhome; and

a ~~single~~ **common** air intake directing air from the interior living area to **both** the furnace and the air-conditioning units **wherein the common air intake comprises inner surfaces of a rear coach panel.**

2. (Amended) The HVAC system of Claim 1, further comprising a filter positioned within the ~~single~~ **common** air intake.

4. (Amended) The HVAC system of Claim 1, wherein the coach panels ^{or} comprise a plurality of vertical ~~walls~~ **coach panels** and a roof **panel**.

5. (Amended) The HVAC system of Claim 4, wherein the ~~single~~ **common** air intake comprises ~~inner surfaces of the~~ ^{inner} **adjoining side and rear** coach panels.

6. (Amended) The HVAC system of Claim 5, wherein the **common** air intake comprises ~~at least one of~~ ^{at least} inner surfaces of **adjoining side and rear** coach panels and inner surfaces of interior trim panels of the motorhome.

7. (Amended) The HVAC system of Claim 6, wherein the ~~single~~ **common** air intake comprises ~~at least two of~~ ^{at least} adjoining inner surfaces of **the side and rear** coach panels, **the roof panel**, and **the** inner surfaces of interior trim panels of the motorhome.

8. (Amended) The HVAC system of Claim 7, wherein the common air intake comprises at least two adjoining inner surfaces of coach panels and at least two adjoining surfaces of interior trim panels wherein each adjoining coach panel adjoins one of the adjoining interior trim panels so as to **together** define a box structure.

9. (Amended) A motorhome having structural panels and interior trim panels **together defining an interior of the motorhome**, the motorhome comprising:

a frame defining a floor plane;

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a heating, ventilation, and air-conditioning (HVAC) system **having a distributed weight** wherein the majority of the weight of the HVAC system is positioned below the floor plane; and

a common air intake directing air from the interior of the motorhome to the HVAC system wherein the common air intake comprises interior surfaces of rear structural panels.

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